



I-TECH

International
Training & Education
Center for Health

Introduction to Quality Improvement Methods

Gabrielle O'Malley, Ph.D.

Research Methods Course, July, 2010



Objectives of this Session

- Provide an introduction to quality improvement methods
- Show some examples of quality improvement methods that have been used in health care
- Practice a quality improvement facilitation tool in a group exercise

Quality Improvement Methods

- Means to an end/action oriented
- Similar to research
 - Uses hypothesis testing
 - Measurement is key
 - Quantitative and qualitative methods to get data

Quality Improvement Versus Clinical Research

Quality Improvement	Clinical Research
Aim is to put best practices into practice to improve care. (Action focussed)	Aim is to generate new, generalizable knowledge and best practices.
The hypothesis can change and adapt with learning	The hypothesis is fixed
“Just enough data”—only data that are essential	“Just in case” data is collected, as there is only one try
Tests are small, sequential and observable	One large test designed to eliminate bias
Use Run Charts or Control charts to analyze data	Use hypothesis tests (T-tests, F-tests, Chi-square); p-value

Source: adapted from Provost, L. and Murray, S. 2007. *The Data Guide: Learning from Data to Improve Health Care.* page 3.

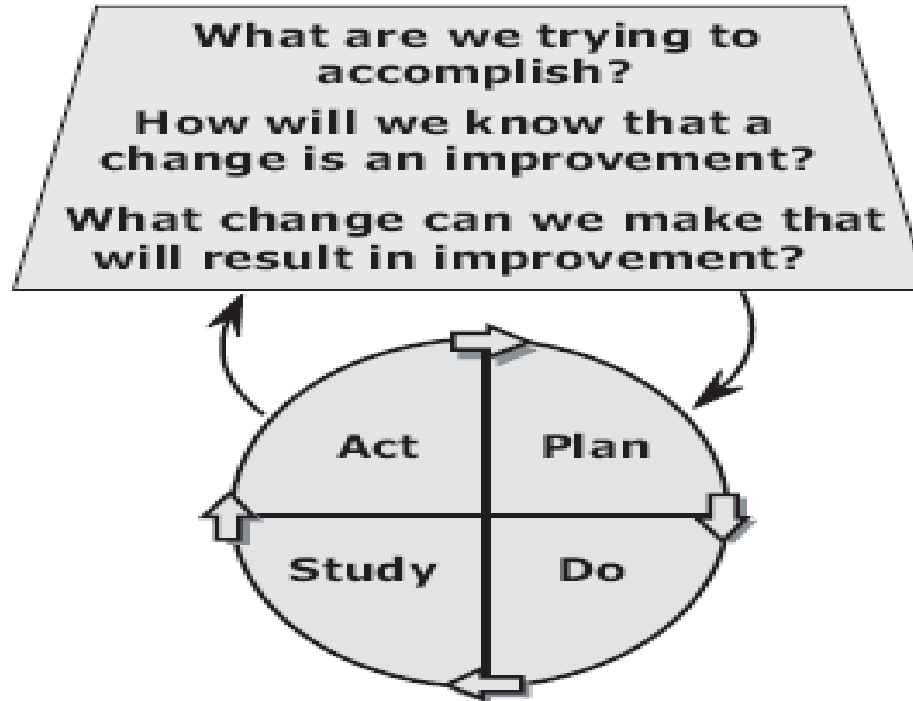


Quality Care Is.....

- **Safe**
- **Effective**
- **Patient-centered**
- **Timely**
- **Efficient**
- **Equitable**

Achieving Quality

Fig 2. The Model for Improvement



Source: Langley G et al. The improvement guide: a practical approach to enhancing organizational performance. San Francisco, Jossey-Bass Publishers, 1996.



Commonalities among QI approaches

- Systems based
- Team based
- Support and Cooperation



Problem Statement


- Waiting times are long for pregnant women because the midwives take too long for tea breaks. This discourages women from coming for prenatal care. (version 1)
- Waiting times for pregnant women have been shown to take up to three hours. This has been stated as a reason that women do not make the desired four prenatal visits before delivery. (final version)

(*Source*: Miller Franco et al., 1997)




The Model for Improvement

Develop the aim for the improvement work. (*What are we trying to accomplish?*)



Establish measures. (*How will you determine that a change results in improvement?*)

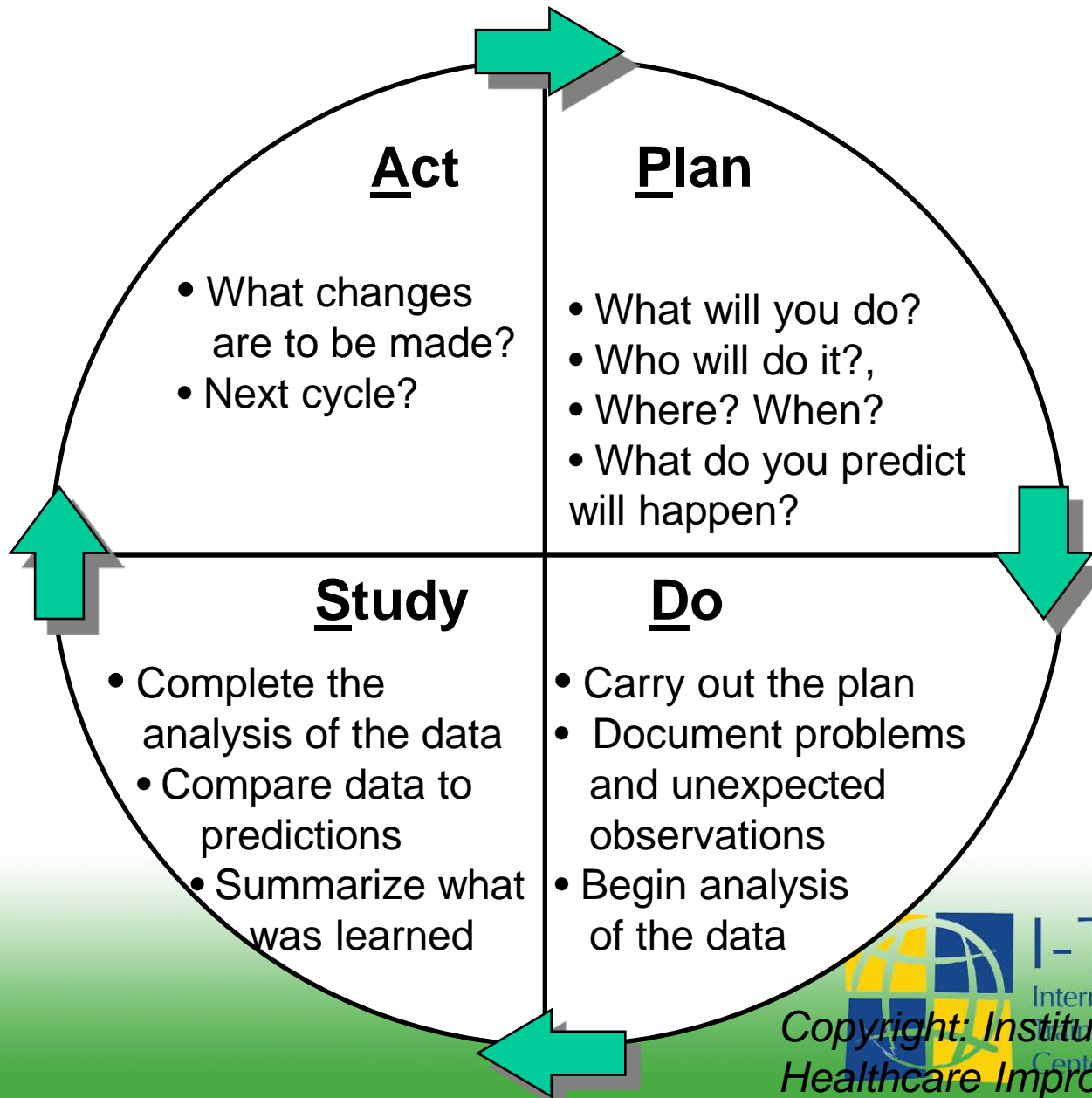


Develop changes to accomplish your aim. (*What changes can we make that will result in improvement?*)



Test with Plan- Do- Study –Act Cycles (PDSA)

Adapted from *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance*. G. Langley, K. Nolan, T. Nolan, C. Norman, L. Provost. Jossey-Bass Publishers., San Francisco, 1996.






Example: Reducing Waiting Time in Clinic XYZ


What are we trying to accomplish?

Clinic XYZ will reduce waiting time for clients by 50% in 9 months.



How will we determine that a change is an improvement?

Measures: 1) Outcome: Time in minutes clients wait, 2) Process: daily supply and demand for care, 3) Balance: patient satisfaction



What changes can I make that will result in improvement?

Change staffing model to accommodate higher demand hours.

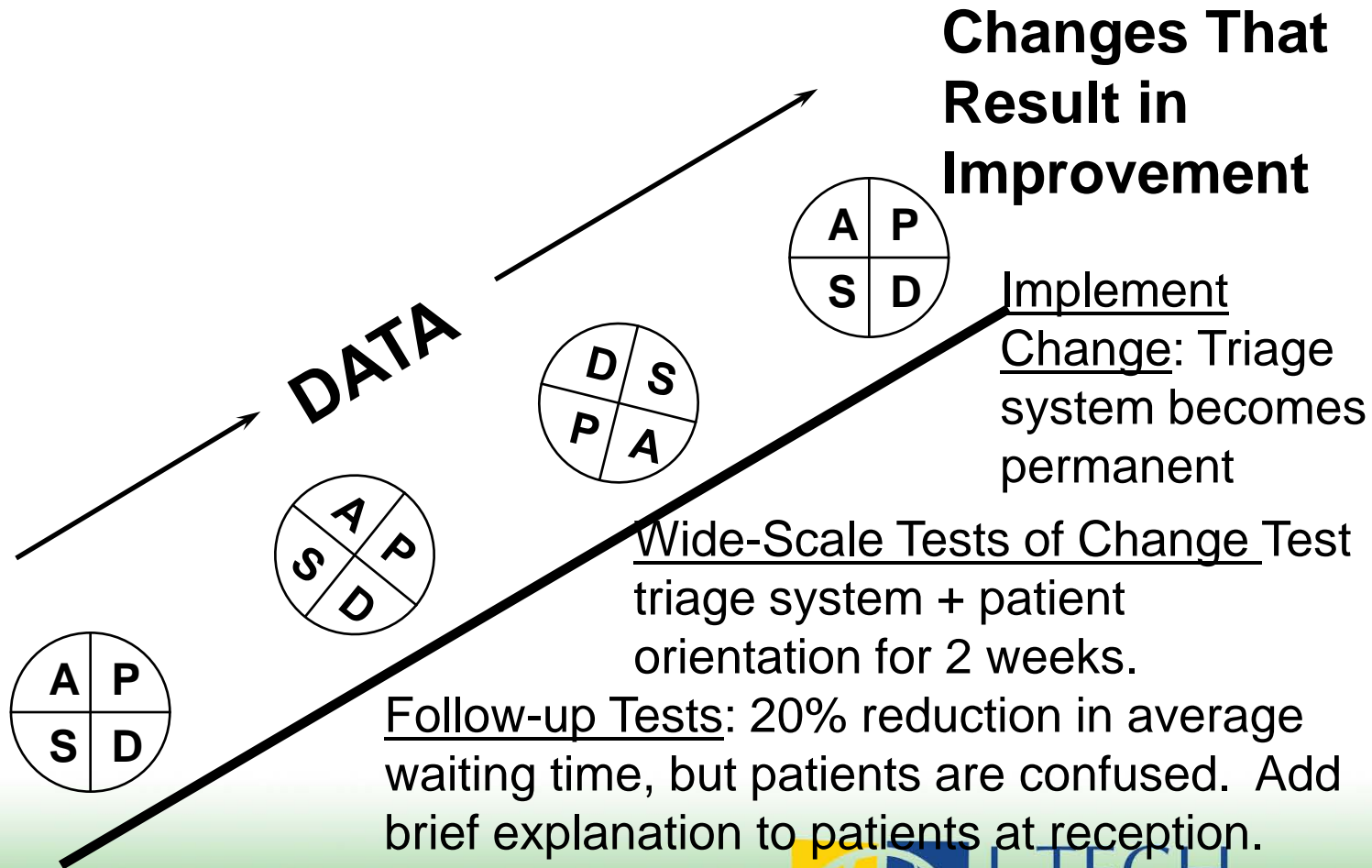


Test with PDSA Cycles

Reallocate nurse shift from a quiet day to a high demand day

Example of Repeated Use of the PDSA Cycle

Hunches
Theories
Ideas



Very Small Scale Test: Reallocate nurse shift from a quiet day to a high demand day. *Result:* Waiting time increased during “quiet” day.
New small scale test: Test triage system for patient intake on 1 day.



Why test when you could Implement?

- Increase the belief that the change will result in improvement
- Predict how much improvement can be expected from the change
- Learn how to adapt the change to conditions in the local environment
- Evaluate costs and side-effects of the change
- Minimize resistance upon implementation
- Even effective changes can fail if they are not implemented properly - testing minimizes this risk by addressing risk factors throughout the process



Example from I-TECH Ethiopia

What are we trying to accomplish?

Increase clients tested for HIV using PITC from 52/month to 1,000/mo in 1 yr; 2,000/mo in 2 yrs

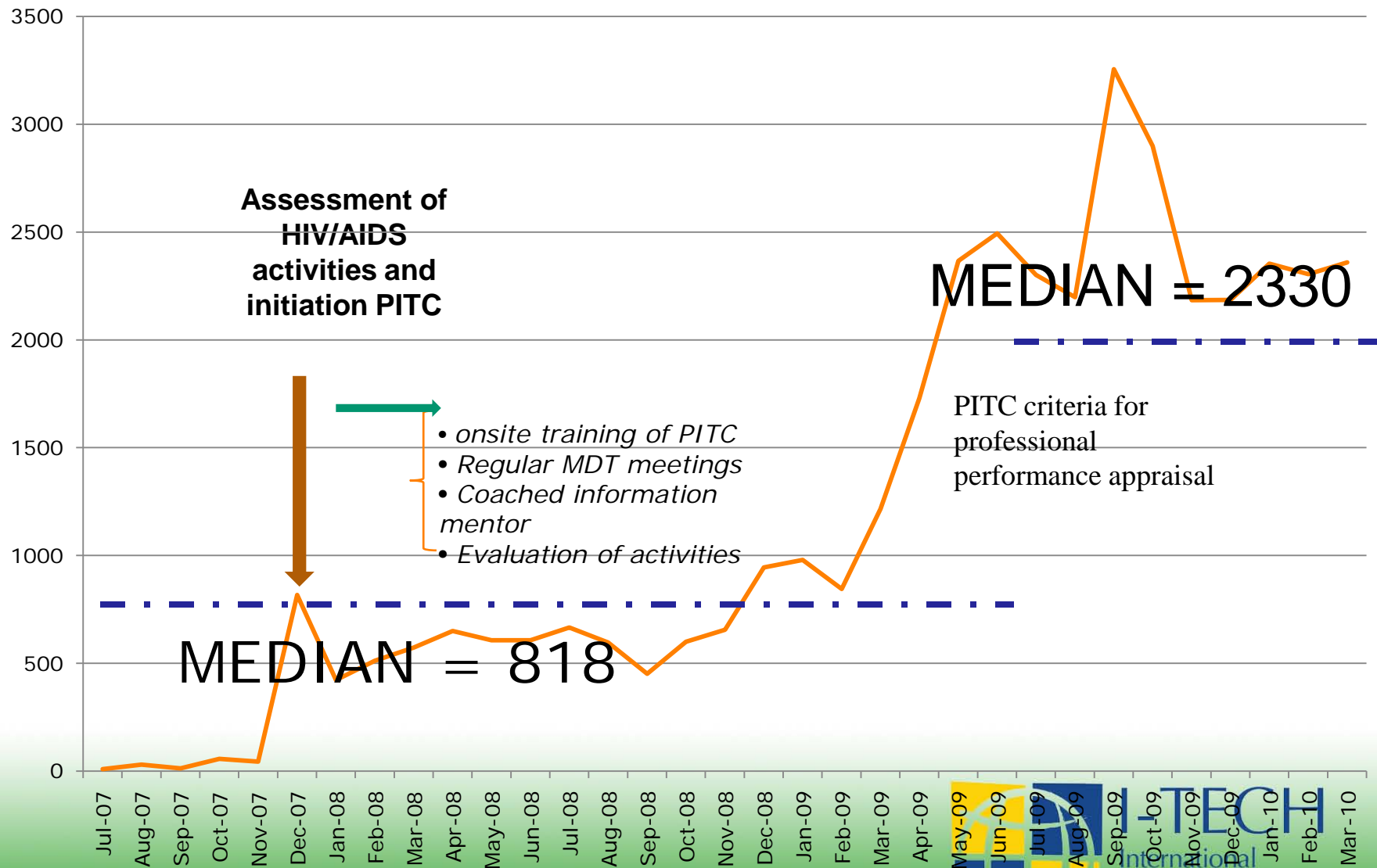
How will we determine that a change is an improvement?

Measure: # of clients tested for HIV using PITC

What changes can I make that will result in improvement? Improve record-keeping, PITC training, leadership engagement, PITC included in professional appraisals

Test with PDSA Cycles

Number of clients tested for HIV using PITC





I-TECH
International
Training & Education
Center for Health

Group Exercise

Process Mapping (Flow Charts)

Process Mapping (Flow Charts)

Process maps (flow charts) are a useful tool for:

- Establishing a common understanding of a process
- Learning how to simplify a process and take out steps that don't add value
- Determining where redundancies or patient safety measures need to be put into place
- Identifying the stakeholders involved in the process to engage in improvement
- Clarifying roles and responsibilities for the steps in a process
- Dreaming of an “ideal” process

Source for this section: Massoud, R., K. Askov, J. Reinke, L.M. Franco, T. Bornstein, E. Knebel, and C. MacAulay. 2001. A Modern Paradigm for Improving Healthcare Quality. *QA Monograph Series 1(1)*. Bethesda, MD.





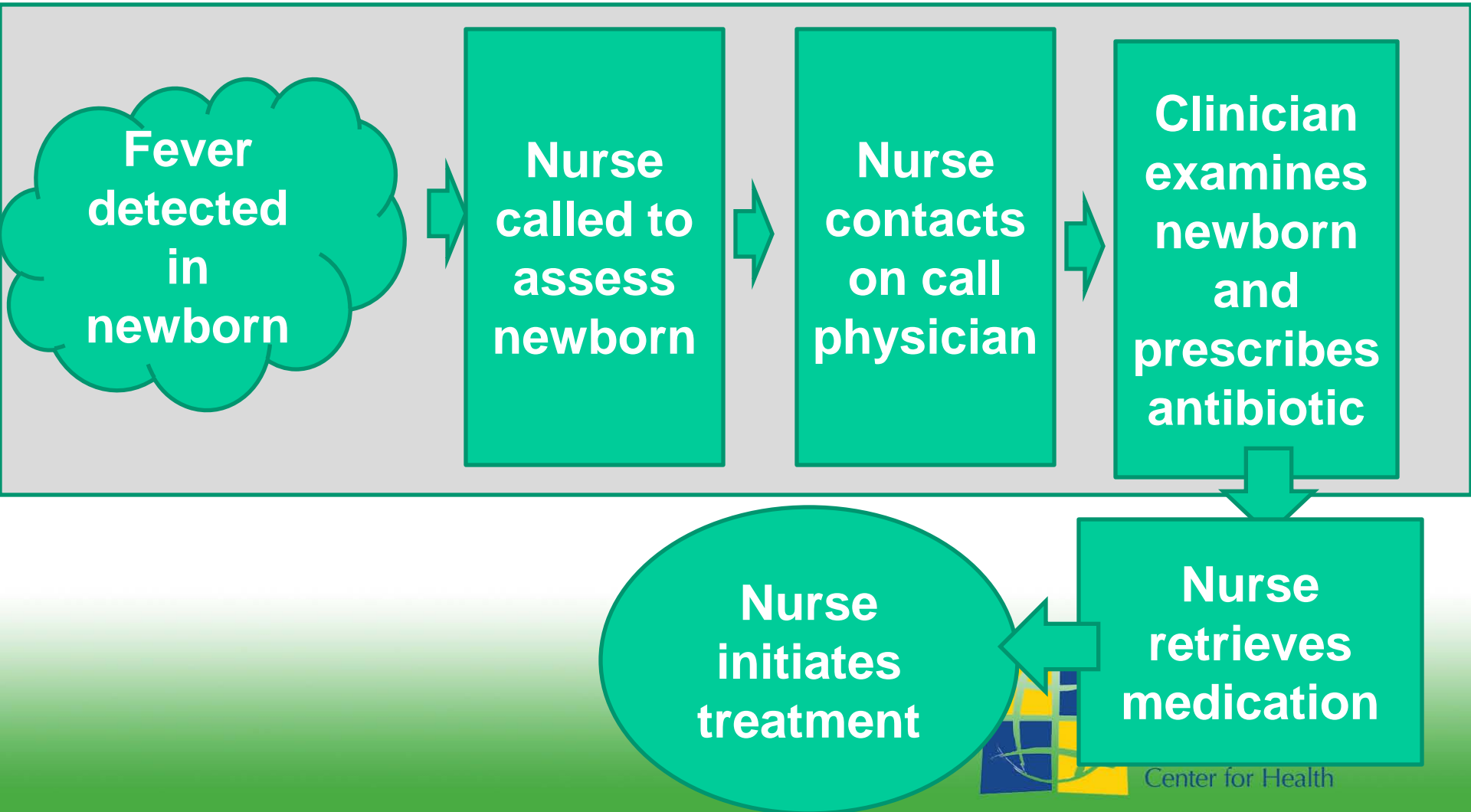
High Level Process Map

A high level process map provides : a birds-eye view into a process.

- This is a quick tool to use and a good place to start. Helpful in identifying who needs to be involved and process measures.
- You may need to move into a detailed map to provide more detail on the process..

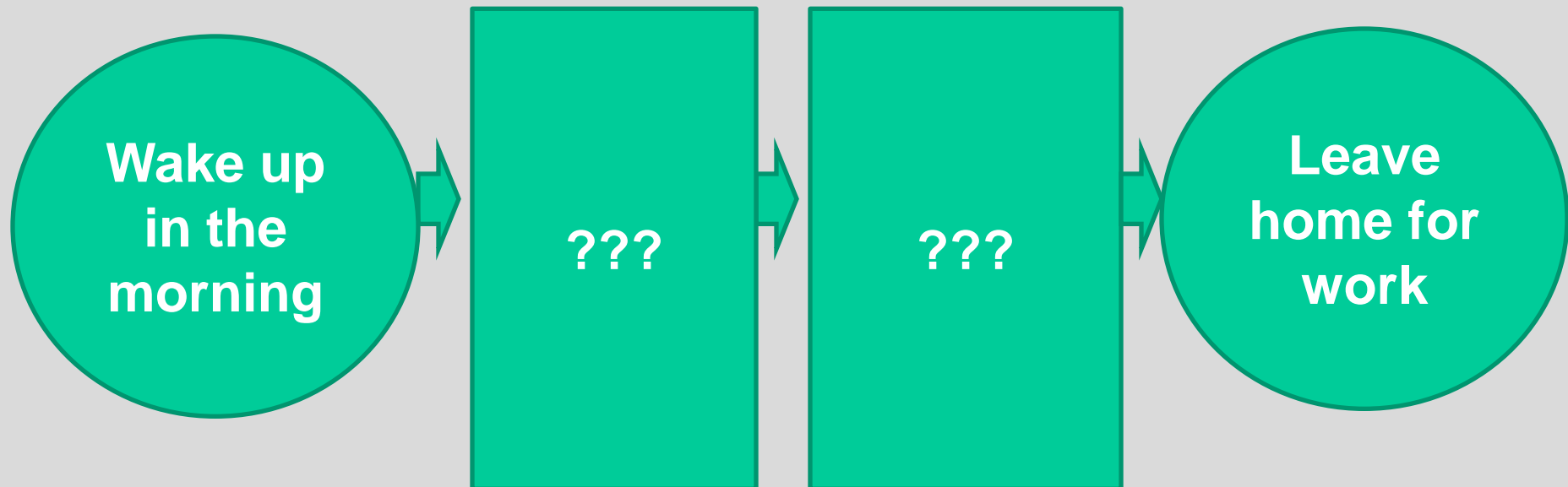


High Level Process Map

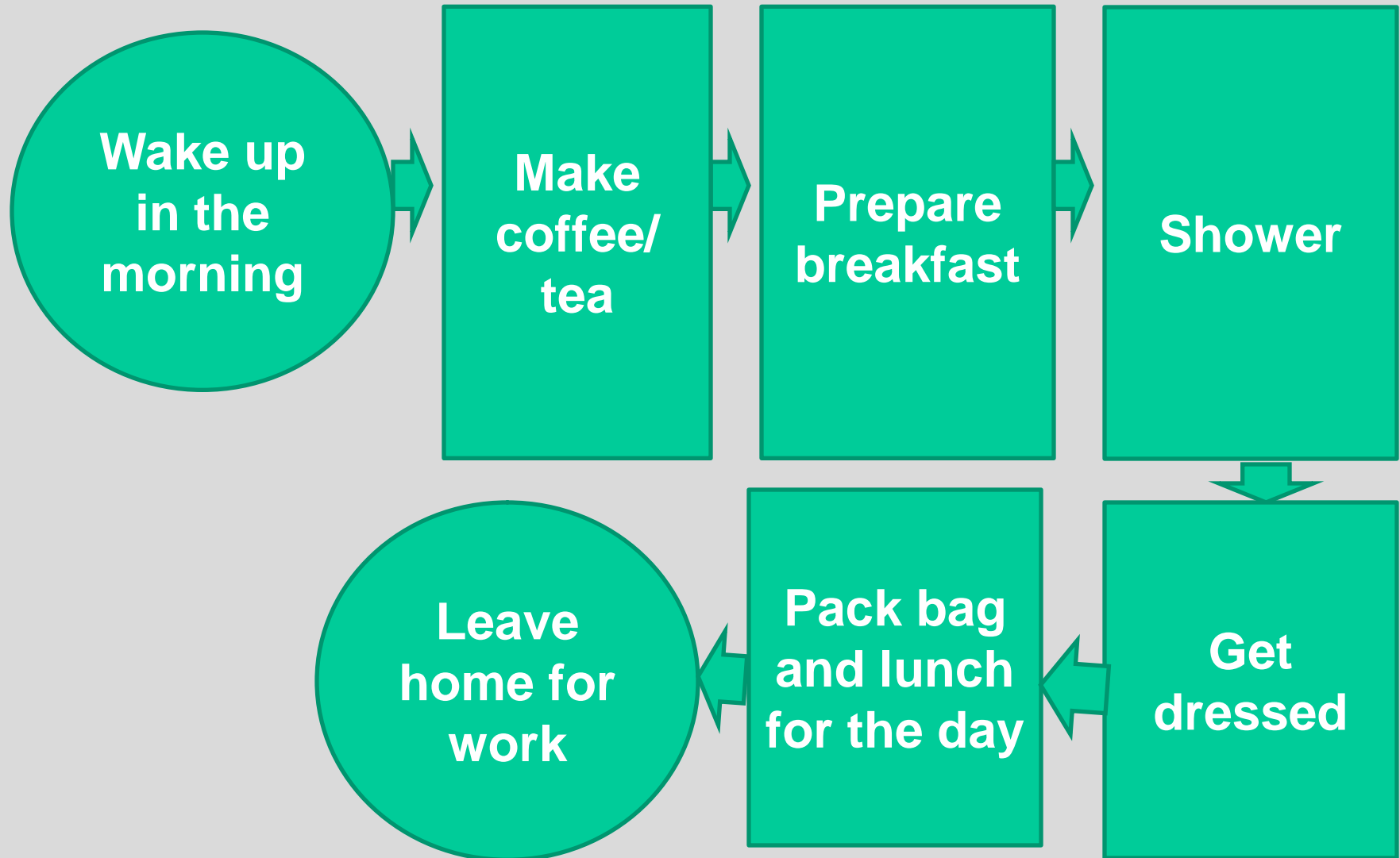


Process Map Exercise

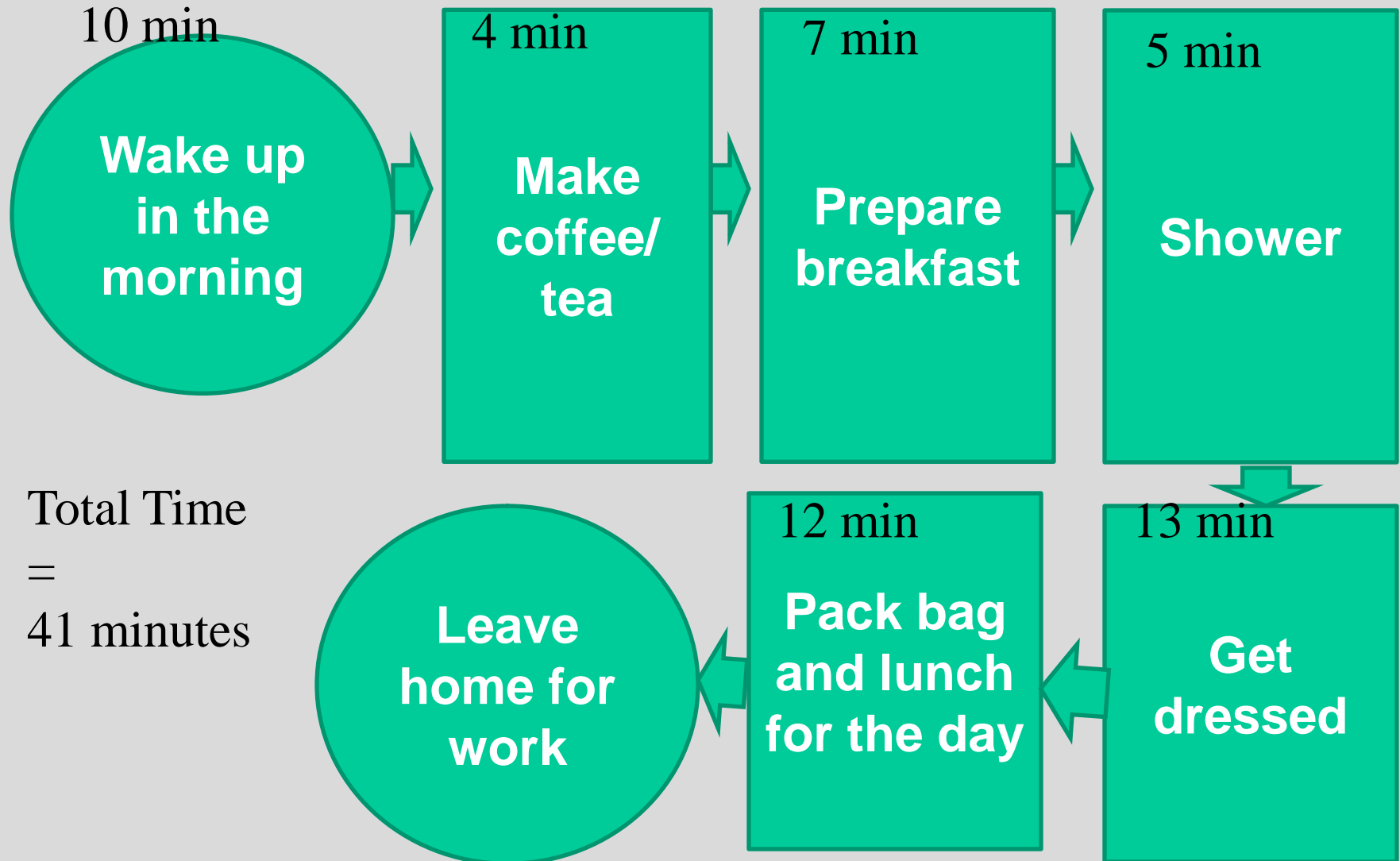
- Work in pairs to draw your own high level process map of your process for leaving for work in the morning.
- Use a box for each major step in your process.



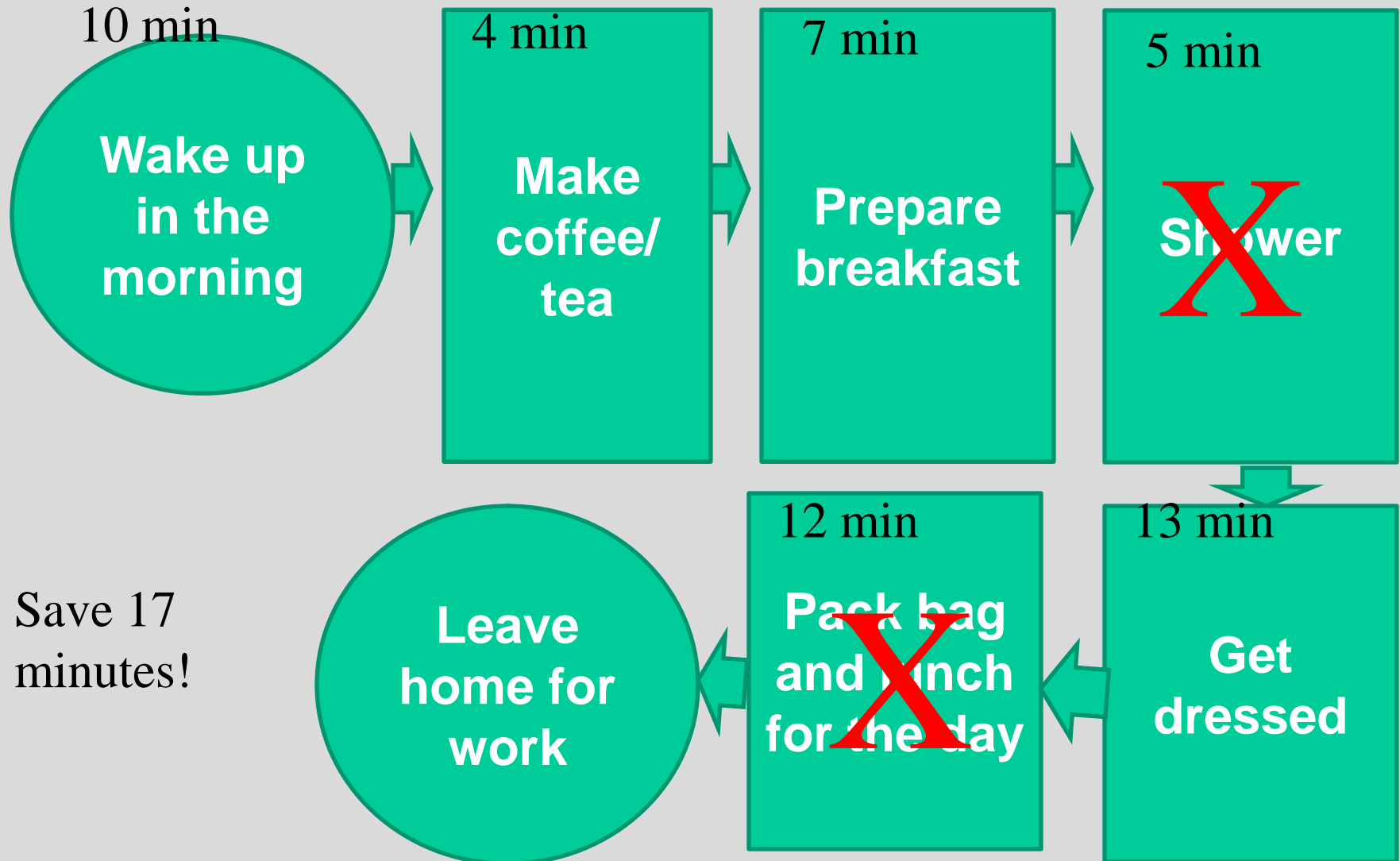
Process Mapping Exercise



Process Mapping Exercise

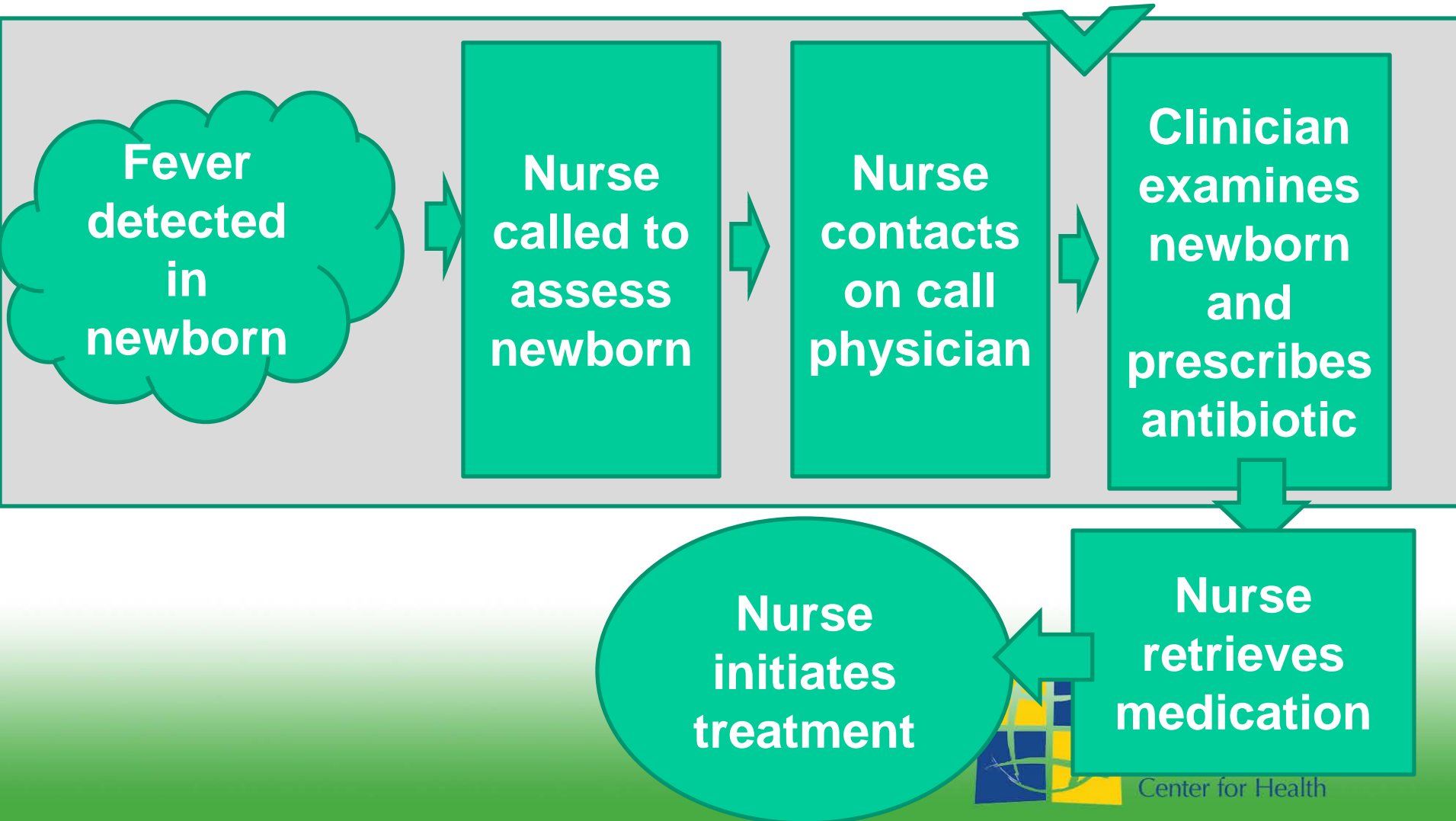


Process Mapping Exercise

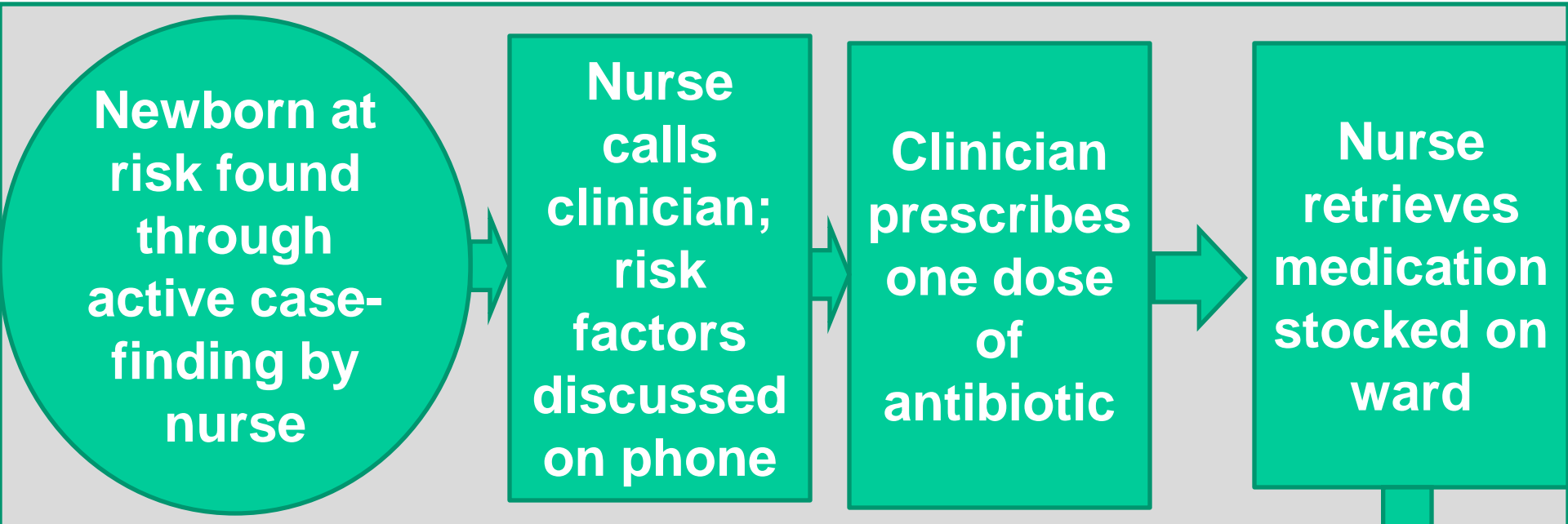


Initiating Treatment for Neonatal Sepsis: High Level Process Map

7 Hours



Re-Designed Process Map



CHANGES TESTED WITH PDSA CYCLES:

- Active case finding to identify cases earlier
- Nurse initiates treatment
- Essential supplies stocked on ward



Thank you!



<http://www.escape-tours.com/imagenes/mbb16.jpg>



I-TECH
International
Training & Education
Center for Health

Process Map for Provider Initiated Counseling and Testing

